

What is claimed is:

1. An electric communication signal block resonator, comprising:
 - a block of dielectric materials having an outside surface including a top surface, a bottom surface, and at least first and second side surfaces; said block defining a plurality of through-holes, each through-hole extending from an opening in said bottom surface to an opening in said top surface; and
 - a metallization deposited via a photodefinable process onto said block.
2. The electric communication signal block resonator of claim 1, wherein said metallization includes input/output coupling metallization deposited via a photodefinable process.
3. The electric communication signal block resonator of claim 1, wherein said metallization includes metallization of tunable varactors deposited via a photodefinable process.
4. The electric communication signal block resonator of claim 1, further comprising:

at least one additional block of dielectric materials having an outside surface including a top surface, a bottom surface, and at least first and second side surfaces;

5 said at least one additional block defining a plurality of through-holes, each through-hole extending from an opening in said bottom surface to an opening in said top surface;

a metallization deposited via a photodefinable process onto said at least one additional block; and

10 said block of dielectric material and said at least one additional block of dielectric material are connected via an iris between said block of dielectric material and said at least one additional block of dielectric material.

5. An RF filter, comprising:

15 a block of dielectric material;

said block of dielectric material having an electrode pattern that adheres to at least one surface of said block; and

20 said electrode pattern consisting of a photodefinable metallization covering at least one surface of said block of dielectric material converted to a photodefined patterned metallization on at least one surface of said dielectric material.

6. The RF filter of claim 5, wherein said electrode pattern consisting of a photodefinable metallization covering at least one surface of said block of dielectric material converted to a photodefined patterned metallization on at least one surface of said dielectric material is an electrode pattern consisting of a photodefinable metallization covering all surfaces of said block of dielectric material converted to a photodefined patterned metallization on from one to all surfaces of said dielectric material

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10 7. The RF filter of claim 5, wherein said metallization includes input/output coupling metallization deposited via a photodefinable process.

15 8. The RF filter of claim 5, wherein said metallization includes metallization of tunable varactors deposited via a photodefinable process.

20 9. The RF filter of claim 5, further comprising:
at least one additional block of dielectric material;
said at least one additional block of dielectric material having an electrode pattern that adheres to at least one surface of said block;
said electrode pattern consisting of a photodefinable metallization covering at least one surface of said at least one additional block of dielectric material converted to a photodefined patterned metallization on

at least one surface of said dielectric material of said at least one additional block; and

5 said block of dielectric material and said at least one additional block of dielectric material are connected via an iris between said block of dielectric material and said at least one additional block of dielectric material.

10. An electronic communication block, comprising:

 a block of dielectric material;

10 said block of dielectric material having an electrode pattern that adheres to at least one surface of said block that is less than 4mm square; and

15 said electrode pattern consisting of a photodefinable metallization covering at least one surface of said block of dielectric material converted to a photodefined patterned metallization on at least one surface of said dielectric material.

20. The electric communication signal block resonator of claim 1, wherein at least one of said photodefined metallic patterned surfaces are less than 4mm square.

20. A method of applying patterned metallization to a ceramic block comprising the steps of:

applying a photodefinaible ink to said ceramic block;
drying said ink;
exposing said photodefinaible ink to UV radiation through a
predefined mask according to the thickness of the film to form a pattern;
5 developing said pattern in a developer solution thereby forming a
patterned ceramic block; and
rinsing, drying and firing said patterned ceramic block.

10 13. The method of claim 12, wherein said ceramic block is an electric communication signal block resonator.

15 14. The method of claim 12, wherein said pattern provides inter-cavity coupling between adjacent and non-adjacent cavities of said ceramic blocks.

16 15. The method of claim 13, wherein said pattern defines an electrode pattern to produce an RF input and output for said electric communication block resonator.

20 16. The method of claim 12, wherein said ceramic block is a waveguide aperture and said pattern provides a coupling probe that can be either electric or magnetic.

17. The method of claim 12, wherein said pattern is a metallization pattern for solder mounting pads on said ceramic blocks.

5 18. The method of claim 12, wherein said pattern provides for metallization in conjunction with tunability that reduces the need for trimming of metal to obtain the correct frequency

10 19. A method for production of photodefinable metallization on electric communication signal block resonators with rounded edges and

square edges, comprising the steps of:

applying a photodefinable ink to said block;

drying said ink;

15 exposing said photodefinable ink to UV radiation through a predefined mask according to the thickness of the film to form a pattern;

developing said pattern in a developer solution thereby forming a patterned block; and

rinsing, drying and firing said patterned block.

20 20. The method of claim 19, wherein said metallization includes input/output coupling.

21. The method of claim 19, wherein said metallization includes metallization of tunable varactors.

22. The method of claim 19, wherein said metallization includes metallization of metallized through holes.